FUTURE FISHERIES IMPROVEMENT PROGRAM
GRANT APPLICATION
(please fill in the highlighted areas)

I. APPLICANT INFORMATION

A. Applicant Name: Trout Unlimited

B. Mailing Address: 111 N Higgins, Suite 500

C. City: Missoula State: MT Zip: 59802

Telephone: 406-543-1192

D. Contact Person: Rob Roberts

Address if different from Applicant:

City: State: Zip:

Telephone:

E. Landowner and/or Lessee Name (if other than Applicant): Lolo National Forest

Mailing Address: Building 24, Fort Missoula

City: Missoula State: MT Zip: 59804

Telephone: 406-329-3950

II. PROJECT INFORMATION*

A. Project Name: Kennedy Creek Mine Reclamation

River, stream, or lake: Kennedy Creek, Ninemile Creek Watershed

Location: Township 16N Range 23W Section 13

County: Missoula

B. Purpose of Project:

To remove historic mine waste rock from the floodplain of Kennedy Creek, recreate natural hillslope contours, and reconstruct the streamchannel to facilitate natural processes in the watershed. The Lost Cabin and Nugget mines are located in the Lolo National Forest on Kennedy Creek, a tributary to Ninemile Creek in western Montana.

C. Brief Project Description:

The Lost Cabin and Nugget mine sites are listed as priorities #75 and #57, respectively, on the Priority Site List developed by Montana's Mine Waste Cleanup Bureau. Waste rock is in direct contact with Kennedy Creek at both mine sites and is actively eroding into the creek at the Nugget mine. In addition, surface water and streambed sediment samples collected downstream of the Lost Cabin and Nugget mines exceeded screening levels for several metals, including copper, lead, and zinc. Monitoring of fish and macroinvertebrate populations show that their population numbers decrease downstream of the mine. There are no longer active claims on the Lost Cabin and Nugget sites, and a potentially responsible party search has determined that no past owners or operators are living or liable for cleanup costs.

The mine reclamation project is a cooperative effort between Missoula County, Trout Unlimited, and the Forest Service. Objectives for the project include removing and relocating mine waste rock from the Lost Cabin and Nugget mines and placing it in a waste repository. The mine sites were thoroughly assessed by Pioneer Technical Services in 1993 and again by AMEC in 2010 for design. The Forest Service Region 1 Abandoned Mineland program is serving as the lead on technical review, with Missoula County and Trout Unlimited leading project planning and coordination.

The project is being completed under CERCLA (Comprehensive Environmental Response Compensation and Liability Act). The reclamation design includes two major components: 1) removal of waste rock material from the floodplain, and 2) reconstruction of the Kennedy Creek stream channels. Approximately 1,000 feet of stream channel will be reconstructed on Kennedy Creek. Channel surveys upstream of the mine disturbance provide a reference condition for the design of the stream channel reconstruction. Channel surveys indicate that upstream reaches of Kennedy Creek are classified as A3b and A4b channel types with water surface slopes vary between 7% and 15%. This project will use the geomorphic approach, meaning that the channel will be stabilized to maintain the general character of the stream yet also given the long term freedom to erode, transport and deposit sediments, and achieve a dynamic equilibrium. Although the stream channel was mechanically altered and routed against the southern hillslope during mining activity, it will be kept in this general location because of the narrow width of the valley and downcutting resulting from the mining operation. The following are specific project activities in chronological order:

Task 1 – Project planning. Finalize engineering drawings and design specifications. Prepare contracts and interagency agreements to authorize response actions.

Task 2 – Improve and realign existing access road and haul routes to facilitate equipment mobilization.

Task 3 – Construct diversion berms on Kennedy Creek to dewater the creek through the Lost Cabin and Nugget sites and install BMPs for erosion control. Install approximately 1,000 feet of diversion piping and construct sediment retention basins.

Task 4 – Clear and grub existing vegetation, where applicable, from mine waste removal sites and repository site. Rough grade waste removal sites and excavate and stockpile clean topsoil –approximately 1,040 cubic yards at the Lost Cabin site and 1,310 at the Nugget site – and vegetative debris for soil capping.

Task 5 – Excavate, load, and haul mine waste – approximately 1,830 cubic yards from the Lost Cabin site and 2,020 cubic yards from the Nugget site. Move primary toxic material to repository site and cap with 24 inches of subsoil and 12 inches of topsoil to prevent contact with surface water and other erosional forces.

Task 6 – Backfill and regrade waste removal sites on Lost Cabin and Nugget mines to create floodplain and match existing hillslopes. Import and spread topsoil and complete final fine grading of sites.

Task 7- Stream reconstruction to restore the natural components and functions of stream dimension, pattern, and profile to Kennedy Creek. Reconstruct approx. 420 feet on the Lost Cabin site and 560 feet on the Nugget site.

Task 8 – Site cleanup. Straw and mulch disturbed areas and remove BMPs where appropriate. Remove stream diversion. Revegetation of the mine sites and repository with native grass seed mixes, and conifers/woody species where appropriate.

D. Length of stream or size of lake that will be treated: 1,000 feet of Kennedy Creek

E. Project Budget: **$** 296,046

Grant Request (Dollars): $ 37,240

Contribution by Applicant (Dollars): $ 10,000 In-kind $ 7,243.50
(salaries of government employees are not considered as matching contributions)

Contribution from other Sources (Dollars): $ 278,802.50 In-kind $
(attach verification - See page 2 budget template)

Total Project Cost: $ 333,286

F. Attach itemized (line item) budget – see template

G. Attach specific project plans, detailed sketches, plan views, photographs, maps, evidence of landowner consent, evidence of public support, and/or other information necessary to evaluate the merits of the project. If project involves water leasing or water salvage complete supplemental questionnaire (fwp.mt.gov/habitat/futurefisheries/supplement2.doc).

H. Attach land management and maintenance plans that will ensure protection of the reclaimed area.

III. PROJECT BENEFITS*

A. What species of fish will benefit from this project?:

Downstream of the mine site, the creek has low densities of both native westslope cutthroat and non-native salmonids. Upstream of the mine site, Kennedy Creek has high densities of native westslope cutthroat and no non-native fish present. The project team believes that the degraded habitat at and below the mine site is partially responsible for the low densities and presence of non-native fish.

B. How will the project protect or enhance wild fish habitat?:

Through stream channel rehabilitation, planting of native riparian vegetation, and the placement of large woody debris, the project will greatly improve the creek's ecological function. The new channel will improve sediment and water routing, provide a diversity of habitat, and also ensure surface flow connectivity. Furthermore, a restored floodplain will allow the creek to achieve dynamic stability and dissipate energy during high flows. The net result will be a creek with fewer sediment sources, lower water temperatures, and greater overall stability – a favorable environment for fish, plants and other aquatic and terrestrial wildlife species. The improved habitat resulting from this restoration project should provide secure habitat for wild fish – westslope cutthroat – at all stages of its life history.

C. Will the project improve fish populations and/or fishing? To what extent?:

Yes. Kennedy Creek is currently a wild fish production area that feeds the mainstem Ninemile Creek. According to Montana Fish Wildlife and Parks, Ninemile Creek had 831 days of fishing pressure in 2005. In conjunction with past and present TU and Forest Service projects – which have included mine reclamation, road decommissioning, culvert replacement, and revegetation – the Kennedy Creek project should help increase wild fish reproduction in the headwaters of Ninemile Creek and improve numbers of fish in the mainstem Ninemile Creek, where most anglers are concentrated.

D. Will the project increase public fishing opportunity for wild fish and, if so, how?:

The mine sites are on public land, therefore there is full access to fishing on Kennedy Creek at the site. The project should yield an increase in wild fish populations, therefore an increased public fishing opportunity for wild fish on Kennedy Creek and the mainstem Ninemile Creek downstream.

E. If the project requires maintenance, what is your time commitment to this project?:

The Kennedy Creek Mine Reclamation project is part of a multi-phased effort that began in 2004 as a collaboration between Trout Unlimited, Missoula County and the Lolo National Forest. To date, this collaborative group has planned, implemented and monitored five mine reclamation projects in the Ninemile Creek watershed. Post.-project maintenance may include periodic site visits to assess project outcomes and look for localized erosion or slope stability. The project team will be visiting the site during post.-project monitoring trips and will visually assess revegetation success, weed infestations and look for signs of vandalism or other threats to public safety.

F. What was the cause of habitat degradation in the area of this project and how will the project correct the cause?:

Mining related impacts on Kennedy Creek have resulted in moderate to low numbers of pools and large woody debris and have reduced instream habitat quality in the lower portions of the creek. The waste rock piles are actively eroding into the creek and the stream has also been relocated against the south hillslope and is further confined by the waste piles. The stream channel is aggraded though most of the mine site and the channel exhibits signs of instability. This project includes direct remediation of these impacts through mine waste removal, regarding hillslopes and reconstructing approximately 1,000 feet of stream channel.

G. What public benefits will be realized from this project?:

The Lost Cabin and Nugget mines are located on public land managed by the US Forest Service and therefore open to public access. The project will improve water quality and fish habitat in Kennedy Creek and revegetate approximately 5 acres of bare ground that is contributing to the accumulation heavy metal-laden water. Also, this mine site has been officially classified as "abandoned" by the Forest Service and Montana DEQ and therefore considered a public liability. Trout Unlimited is providing staff and volunteer time to the project, and working with the Forest Service and other stakeholders to provide funding for cleanup.

H. Will the project interfere with water or property rights of adjacent landowners? (explain):

No. The project area is on public land and will not affect any water rights holders on Kennedy Creek.

I. Will the project result in the development of commercial recreational use on the site?: (explain):

No. The site is on public land and in a remote location.

J. Is this project associated with the reclamation of past mining activity?:

Yes.

Each approved project sponsor must enter into a written agreement with the Department specifying terms and duration of the project.

IV. AUTHORIZING STATEMENT

I (we) hereby declare that the information and all statements to this application are true, complete, and accurate to the best of my (our) knowledge and that the project or activity complies with rules of the Future Fisheries Improvement Program.

Applicant Signature:  Date: 11/27/2012

Sponsor (if applicable):

***Highlighted boxes will automatically expand.**

Mail To: **Montana Fish, Wildlife & Parks**
Habitat Protection Bureau
PO Box 200701
Helena, MT 59620-0701

Incomplete or late applications will be returned to applicant.

Applications may be rejected if this form is modified.

BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS
(Revised 11/27/2012)

WORK ITEMS (ITEMIZE BY CATEGORY)	NUMBER OF UNITS	UNIT DESCRIPTION*	COST/UNIT	TOTAL COST	CONTRIBUTIONS			
					FUTURE FISHERIES REQUEST	IN-KIND SERVICES	IN-KIND CASH	TOTAL
Personnel								
Survey				$ -				$ -
Design	0.06	%	$241,450.00	$ 14,487.00			14,487.00	$ 14,487.00
Engineering	0.03	%	$241,450.00	$ 7,243.50			7,243.50	$ 7,243.50
Permitting	0.03	%	$241,450.00	$ 7,243.50		7,243.50		$ 7,243.50
Oversight	0.1	%	$241,450.00	$ 24,145.00			24,145.00	$ 24,145.00
Labor				$ -				$ -
Travel								
Mileage				$ -				$ -
Per diem				$ -				$ -
Construction Materials								
				$ -				$ -
Equipment								
Road re-alignment and improvement	1	LS	$4,370.00	$ 4,370.00			4,370.00	$ 4,370.00
Stream diversions	1	LS	$25,206.00	$ 25,206.00			25,206.00	$ 25,206.00
Lost Cabin Mine Waste Removal	1	LS	$29,086.00	$ 29,086.00			29,086.00	$ 29,086.00
Lost Cabin Stream Reconstruction	420	LF	$38.00	$ 15,960.00	15,960.00			$ 15,960.00
Nugget Mine Waste Removal	1	LS	$42,071.00	$ 42,071.00			42,071.00	$ 42,071.00
Nugget Stream Reconstruction	560	LF	$38.00	$ 21,280.00	21,280.00			$ 21,280.00
Repository Construction	1	LS	$103,477.00	$ 103,477.00			103,477.00	$ 103,477.00
(SUBTOTAL) **				**$ 241,450.00**				$ -
Mobilization								
				$ -				$ -
Mobilization	0.1	%	$241,450.00	$ 24,145.00			24,145.00	$ 24,145.00
Construction BMPs	0.05	%	$241,450.00	$ 12,072.00			12,072.00	$ 12,072.00
Cleanup	1	LS	$2,500.00	$ 2,500.00			2,500.00	$ 2,500.00
				$ -				$ -
			TOTALS	$ 333,286.00	$ 37,240.00	$ 7,243.50	$ 288,802.50	$ 333,286.00

BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS
(Revised 11/27/2012)

*Units = feet, hours, inches, lump sum, etc.

**Subtotal = cost estimate for project activities that forms basis for percentage cost of design and mobilization

**Cost estimates described in more detail in attached Cost Estimate

MATCHING CONTRIBUTIONS

CONTRIBUTOR	IN-KIND SERVICE	IN-KIND CASH	TOTAL
Trout Unlimited	$ 7,243.50	$ 10,000.00	$ 17,243.50
US Forest Service	$ -	$ 78,802.50	$ 78,802.50
MT DNRC	$ -	$ 200,000.00	$ 200,000.00
	$ -	$ -	$ -
	$ -	$ -	$ -
	$ -	$ -	$ -
	$ -	$ -	$ -
	$ -	$ -	$ -
	$ -	$ -	$ -
	$ -	$ -	$ -

Engineer's Estimate

Mine Waste Alternative MW-1: Excavation and Disposal in On-Site Repository with Simple Soil Cover

Engineering Evaluation and Cost Analysis

Kennedy Creek Mining Complex - Nugget & Lost Cabin Mines

Cost Item	Units	Unit Cost	Quantity	Est. Subtotal	References / Comments
Road re-alignment & improvement					
Cut & chip trees	acre	$ 7,200	0.1	$ 720	assumes assocaited debris burned on site
Clearing and grubbing	acre	$ 6,900	0.1	$ 690	includes stump removal
Rough grading	HR	$ 120	8	$ 960	Assume a dozer with a ripper at $120/hr for 16 hours.
Fine Grading	HR	$ 125	8	$ 1,000	Excavator for 8 hrs at $125
Select limbing / tree removal	LS	$ 1,000	1	$ 1,000	engineer's estimate
			Subtotal	$ **4,370**	
Stream Diversions					
Diversion berm	ea	$ 3,500	2	$ 7,000	
Diversion piping, installed	LF	10.88	1,030	$ 11,206	
Sedimentation basins	ea	3,500	2	$ 7,000	
			Subtotal	$ **25,206**	
Lost Cabin Mine Waste Removal					
Excavate & Stockpile Non-Mine Fill	BCY	$ 2.25	1,040	$ 2,340	
Excavate, load, haul mine waste	CY	$ 4.94	1,830	$ 9,040	
Backfill - common earth	CY	$ 2.69	1,040	$ 2,798	backfill with stockpiled non-mine fill
Rough grading	CY	$ 1.00	1,040	$ 1,040	
Stream reconstruction	LF	$ 38.00	420	$ 15,960	
Salvage topsoil from borrow area	CY	$ 19.71	420	$ 8,278	
Import / spread topsoil	CY	$ 4.44	420	$ 1,865	
Fine grading	SY	$ 1.00	2,500	$ 2,500	
Revegetation	SY	$ 0.49	2,500	$ 1,225	
			Subtotal	$ **45,046**	
Nugget Mine Waste Removal					
Excavate & Stockpile Non-Mine Fill	BCY	$ 2.25	1,310	$ 2,948	
Excavate, load, haul mine waste	CY	$ 4.94	2,020	$ 9,979	
Backfill - common earth	CY	$ 2.69	1,310	$ 3,524	
Rough grading	CY	$ 1.00	3,090	$ 3,090	rough grade non-mine fill and remaining mine waste (1,780 CY)
Stream reconstruction	LF	$ 38.00	560	$ 21,280	
Salvage topsoil from borrow area	CY	$ 19.71	680	$ 13,403	
Import / spread topsoil	CY	$ 4.44	680	$ 3,019	
Fine grading	SY	$ 1.00	4,100	$ 4,100	
Revegetation	SY	$ 0.49	4,100	$ 2,009	
			Subtotal	$ **63,351**	
Repository Construction					
Surveying	LS	$ 5,000	1	$ 5,000	
Cut & chip trees	acre	$ 7,200	1.5	$ 10,800	assumes associated debris burned on site
Clearing and grubbing	acre	$ 6,900	1.5	$ 10,350	
Strip / stockpile topsoil	BCY	$ 0.72	1,129	$ 813	
Excavate / stockpile subsoil in footprint	BCY	$ 2.25	4,517	$ 10,164	assume 4 ft of subsoil excavated (Means)
Rough grade subgrade	HR	$ 120	6	$ 720	
Compact subgrade	ECY	$ 1.26	1,210	$ 1,525	

Engineer's Estimate

Mine Waste Alternative MW-1: Excavation and Disposal in On-Site Repository with Simple Soil Cover

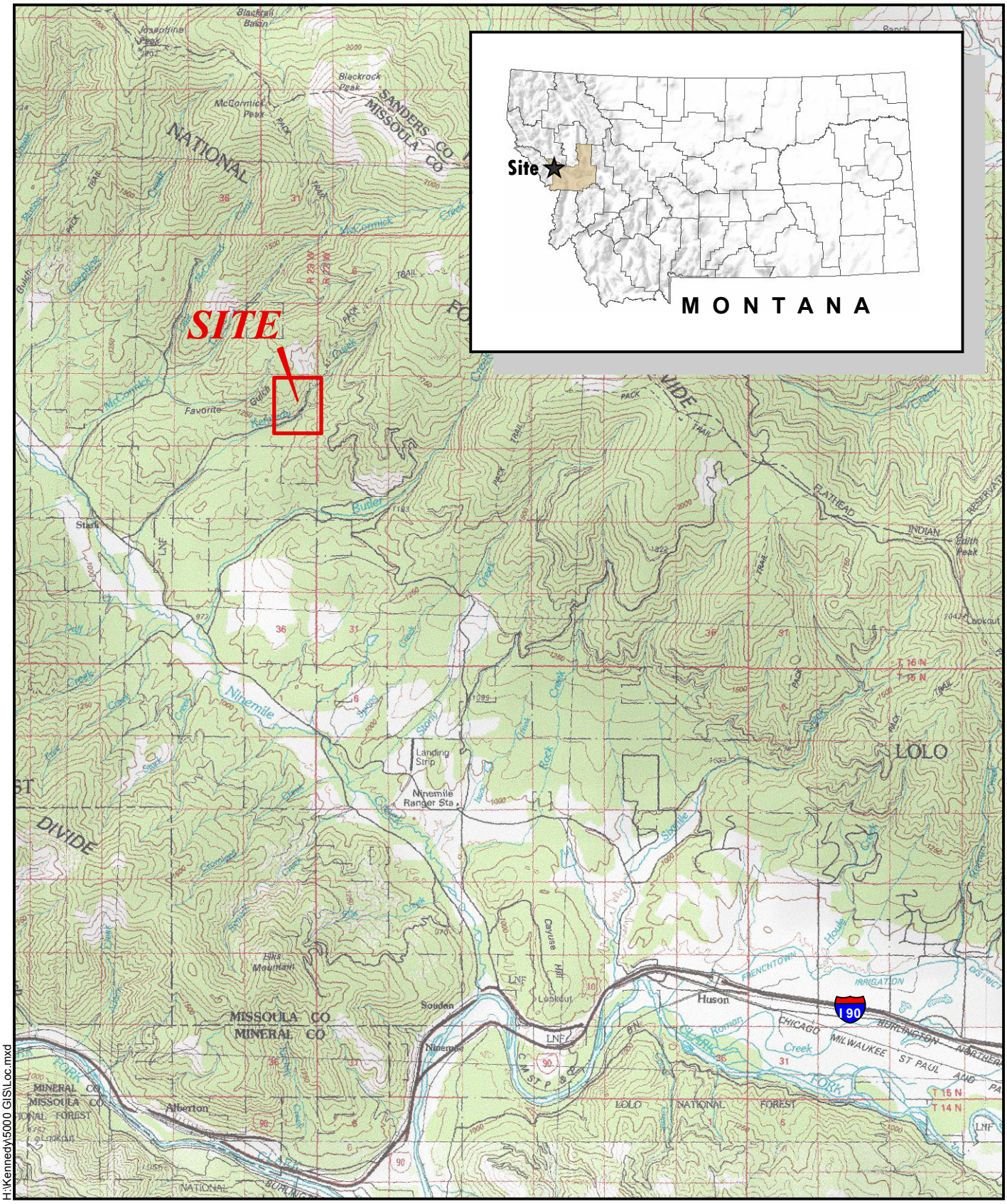
Engineering Evaluation and Cost Analysis

Kennedy Creek Mining Complex - Nugget & Lost Cabin Mines

Cost Item	Units	Unit Cost	Quantity	Est. Subtotal	References / Comments
Place and compact tailings	LCY	$ 5.78	4,810	$ 27,802	assumes 25% bulking factor for loose (excavated) waste rock
Grade and shape tailings	LCY	$ 2.62	4,810	$ 12,602	
Replace subsoil & topsoil	LCY	$ 2.62	6,353	$ 16,644	
Broadcast seeding with hydromulch	SY	$ 0.49	7,260	$ 3,557	
Runoff / runon control ditches	LS	$ 2,000	1	$ 2,000	
Sediment/ erosion control	LS	$ 1,500	1	$ 1,500	silt fence, straw wattles, etc.
			Subtotal	$ **103,477**	
Subtotal - Direct Capital Costs				$ **241,450**	
Mobilization and Site Prep					
Mobilization	%	$ 241,450	10%	$ 24,145	
Construction BMPs	%	$ 241,450	5%	$ 12,073	
Demobilziation and Cleanup	LS	$ 2,500	1	$ 2,500	
			Subtotal	$ **38,718**	
Engineering / Support Costs					
Design, Project Management	%	$ 241,450	12%	$ 28,974	
Construction Management	%	$ 241,450	10%	$ 24,145	
			Subtotal	$ **53,119**	
Contingency					
25% of capital and construction costs	%	$ 241,450	25%	$ 60,363	
TOTAL DESIGN AND CONSTRUCTION COSTS				$ **393,649**	

Assumptions

1. Approximately 2,020 BCY and 1,830 BCY of mine waste at the Nugget and Lost Cabin Mines to be removed, respectively.
2. An additional 1,310 BCY and 1040 BCY of surficial (non-mine waste) fill are present at the Nugget and Lost Cabin Mines, respectively.
3. Topsoil will be salvaged within the potential repository area for placement at the reclaimed mines and use in respository cover.
4. Total depth of mine waste within the repository will be four feet.
5. Four feet of subsoil will be excavated from the repository foot-print. Subsoil will be used for cover construction and mine site reclamation
6. No liner will be required for the repository.
7. Existing on-site materials are suitable for constructing the repository base and cover layers.
8. The existing access road to the repository is sufficient for construction purposes and no improvements will be required.
9. Minimal improvements to the mine access road are required, including removal of select trees & tree limbs.
10. The mine access road will be re-aligned to the northwest around the existing slump. The total linear distance of the re-aligment will be 120 ft.
11. Debris from clearing and grubbing will be burned on site.



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Source: USGS 250K Montana Quadrangle

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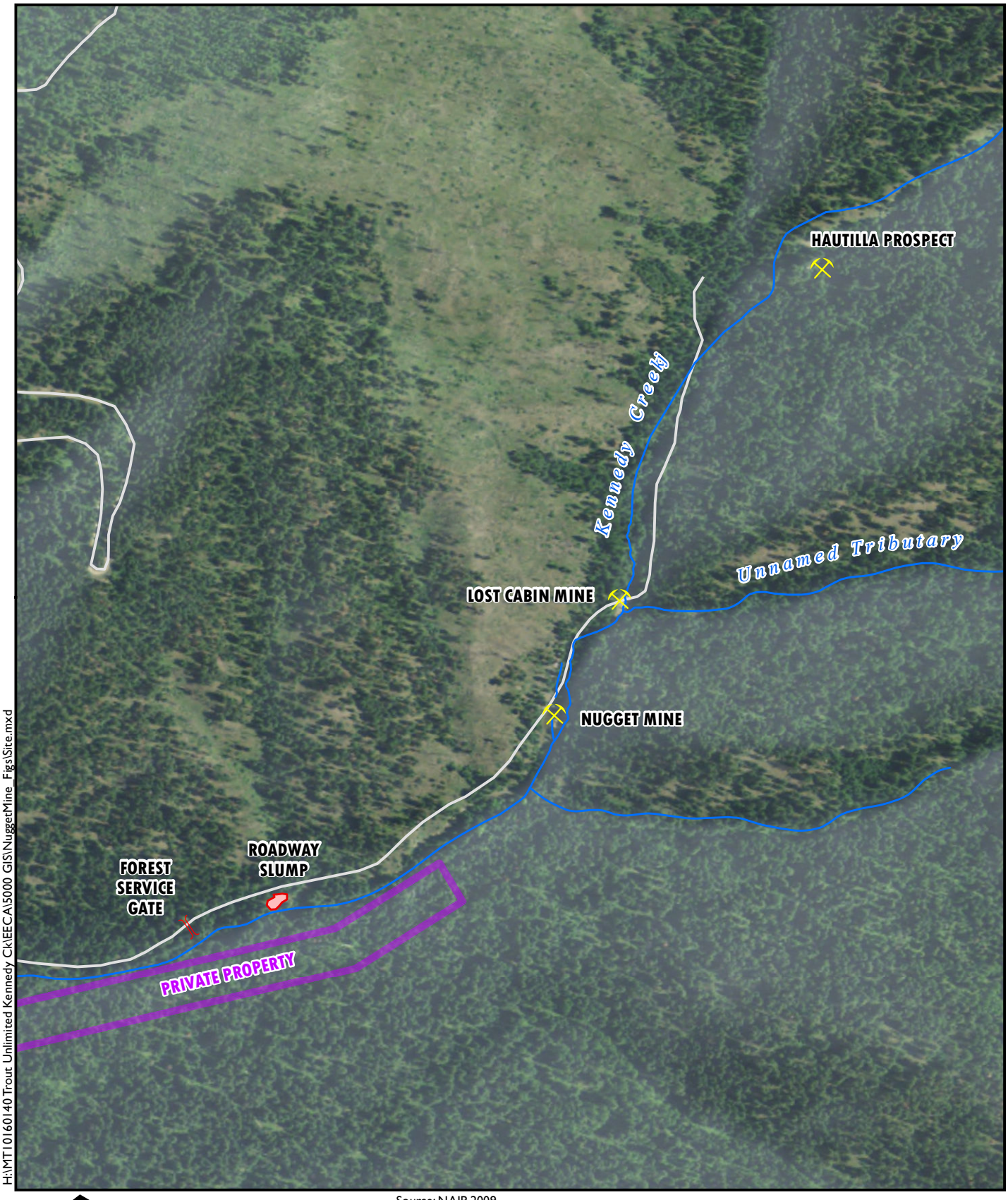
AMEC Geomatrix

Site Location Map
Kennedy Creek Mining Complex
Missoula County, Montana
FIGURE 1



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Source: NAIP, 2009

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AMEC Geomatrix

Site Map
Kennedy Creek Mining Complex
Missoula County, Montana
FIGURE 2

Site Photos
Lost Cabin Mine

Kennedy Creek – existing conditions

Mine waste rock

Repository site – existing conditions

Access road – existing conditions

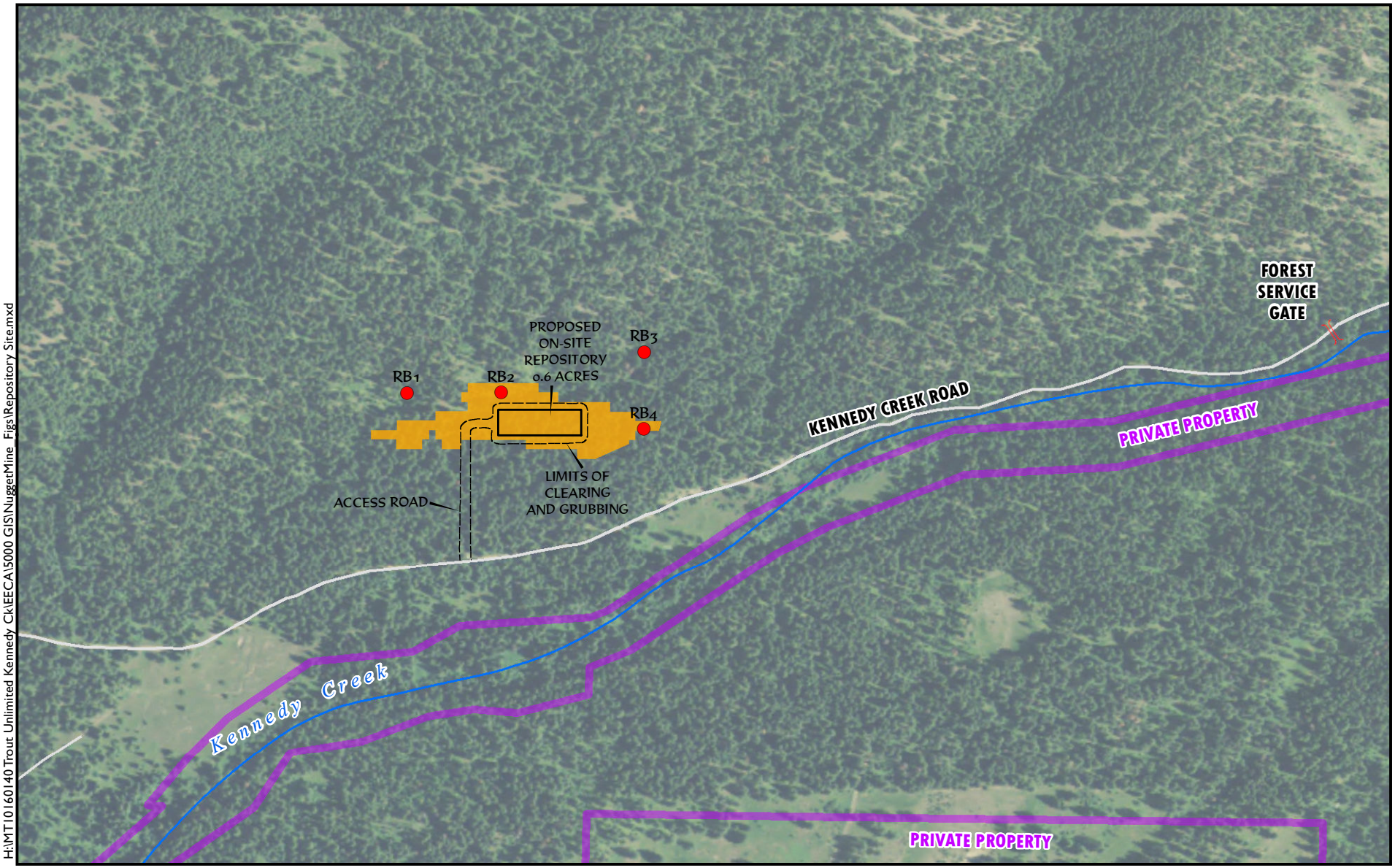
Site Photos
Nugget Mine

Partially collapsed adit

Adit discharge

Settling pond

Kennedy Creek and mine waste rock



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Source: NAIP, 2009

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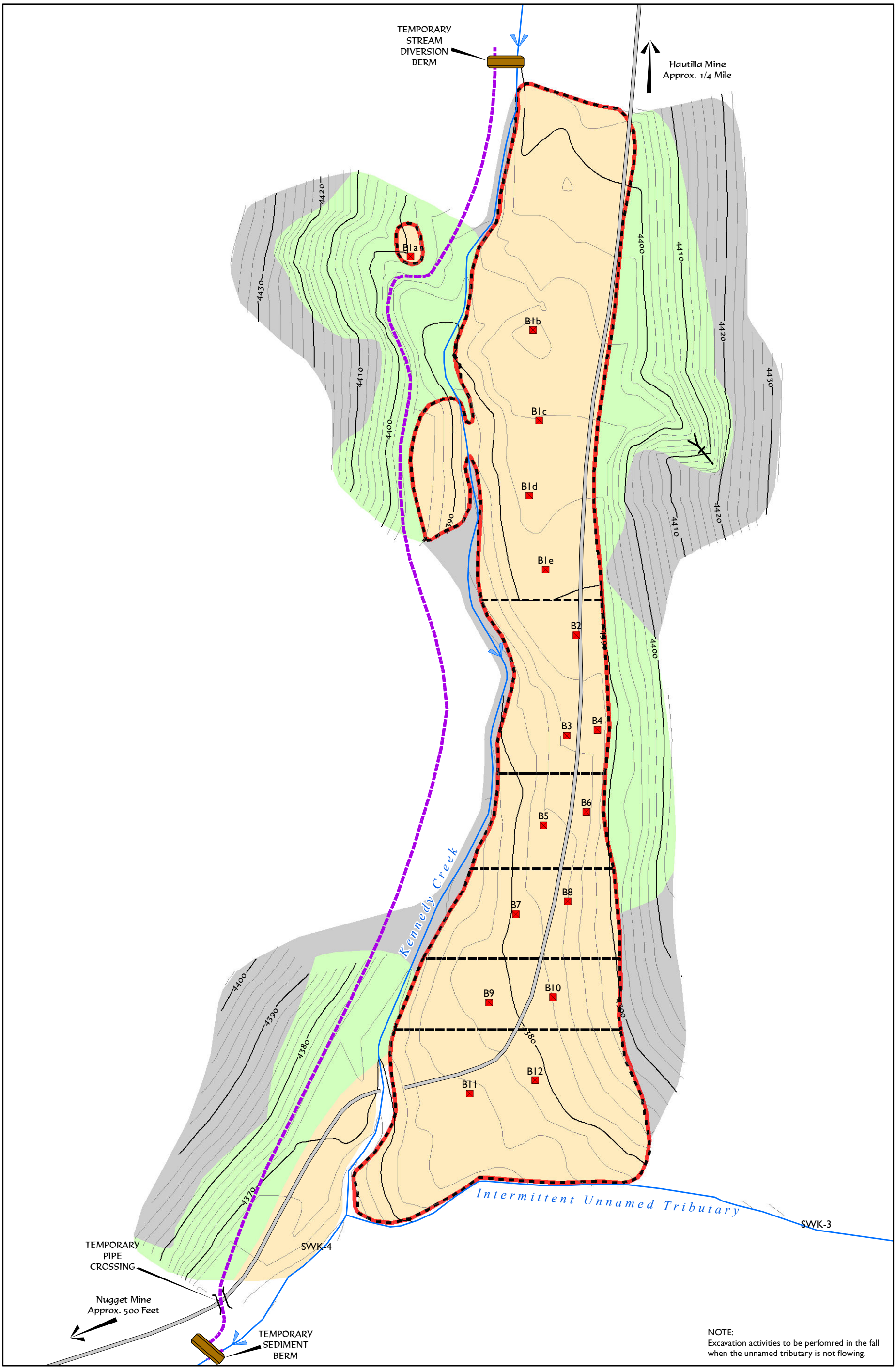
AMEC Geomatrix

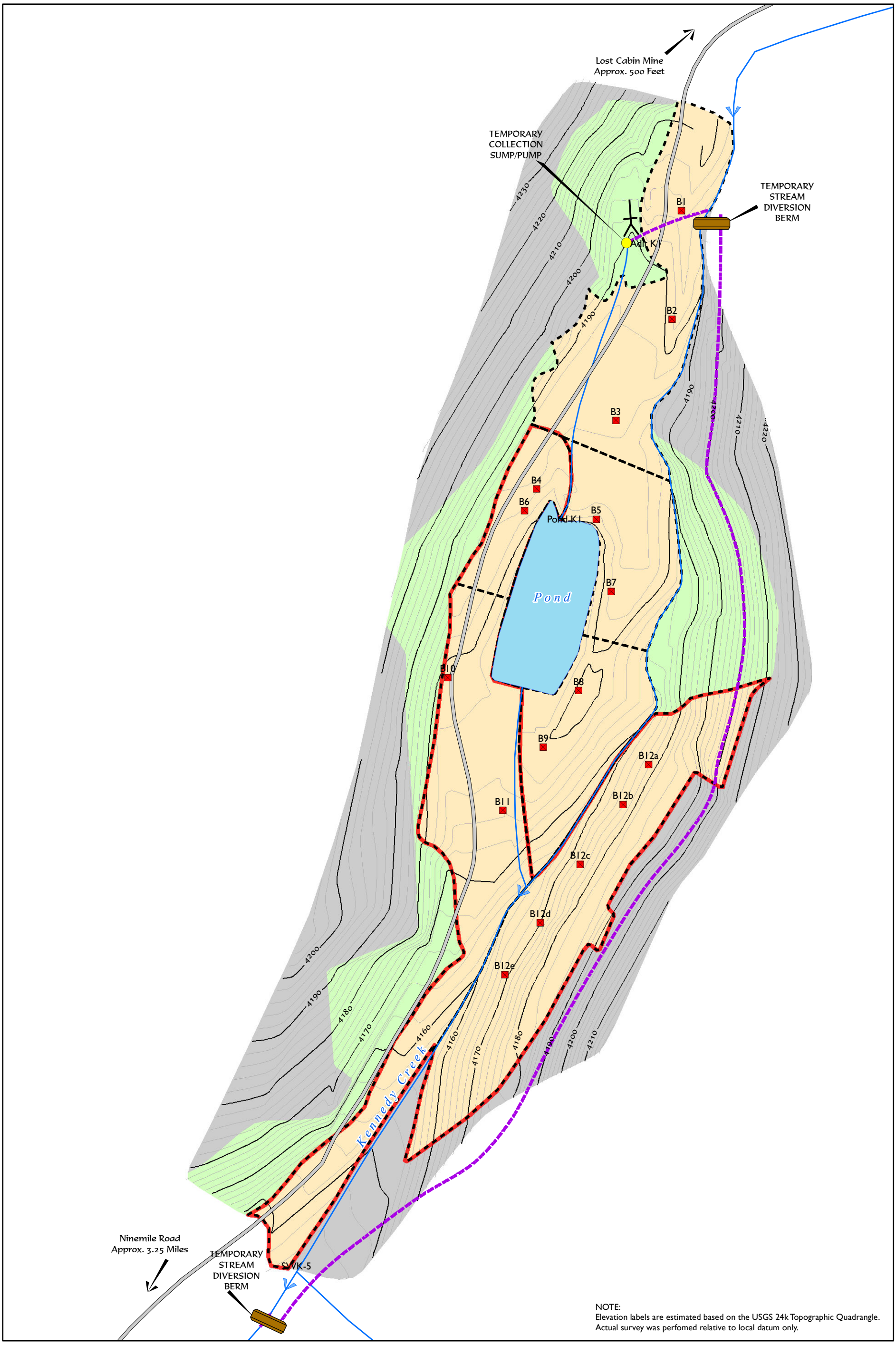
Hand Auger Borehole Location

Extent of Suitable Repository Area

Repository Site
Kennedy Creek Mining Complex
Missoula County, Montana
FIGURE 8



Lost Cabin Mine Excavation - Alternatives MW-1 AND MW-2
Kennedy Creek
Missoula County, Montana
FIGURE 10



Nugget Mine Excavation -
Alternatives MW-1 and MW-2
Kennedy Creek
Missoula County, Montana
FIGURE 11